

Remarks:

Reconsideration of the application is requested.

Claims 1-19 remain in the application. Claims 12 and 16 have been amended.

In item 3 on page 2 of the Office action, claims 1-3, and 11 have been rejected as being anticipated by Braun et al.

(4,809,296) under 35 U.S.C. § 102. Applicants respectfully traverse.

On page 3, first paragraph of the Office action, the Examiner has stated that all the frequencies selectively changed during transmission occurs within one transmission channel because all the different carrier frequencies are used in one transmission medium.

It appears that the Examiner is still confused with regard the terms channel and channel medium. The channel medium can be air, vacuum, seawater, coaxial cables, fiber optic cables, etc. The mere fact that data are being transmitted in the same medium does not mean that they are being transmitted in the same channel. For example, it is well known that television stations transmit their signals on different channels in the same medium, i.e. air or cable. It is also well known that in the U.S., the FCC has allocated 666 duplex

channels for the cellular mobile system. Each duplex channel occupies a spectrum of 60 KHz and is transmitted in the air.

Please note that Braun et al perform a frequency hopping method (See column 3, lines 53-59). On page 2 of the office action, the Examiner has stated that Braun et al. could be considered to be changing frequencies within a single channel or given frequency bandwidth of f_I to f_{IV} .

The Examiners allegations are not consistent with the terminology accepted in the art. Braun et al. describe a frequency hopping method (column 3, lines 60-65) that hops over a frequency band that includes a number of channels. Each channel is defined as a spectral region with a central frequency (f_I , f_{II} , f_{III} , f_{IV}) in the hopset, and the hopset is the set of possible carrier frequencies. The bandwidth of f_I to f_{IV} would be considered to be the total hopping bandwidth if f_{IV} were the largest central frequency in the hopset. One of ordinary skill in the art would not consider the total hopping bandwidth of f_I to f_{IV} to be a channel. Reference material on the topic has been provided with this response. Pages 278-280 of Wireless Communications Principles & Practice, Rappaport (1996), explains the terminology associated with frequency hopping.

Claims 1 and 11 include a step of changing the different carrier frequencies only within one single transmission channel, which is not taught or suggested by Braun et al.

Further, Braun breaks up a data message into blocks and transmits the blocks. As shown in Fig. 3, blocks ABC, ADE, BDF, and CEF, are temporally transmitted. The same data message is not being transmitted on different carrier frequencies

Claims 1 and 11 also include a step of transmitting a data message more than one time using at least two different carrier frequencies in temporal succession to increase immunity to interference, which is not taught or suggested by Braun et al.

In item 6 on page 4 of the Office action, claims 4, 5, 9, and 10 have been rejected as being obvious over Braun et al. (4,809,296) under 35 U.S.C. § 103.

These claims are patentable for the reasons specified above in regard to claim 1.

In regard to claim 4, Braun et al. does not suggest the claimed limitations and it is not merely a matter of design choice. Please page 7, line 7 through page 9, line 2 of the

application where it is explained that a minor frequency change can change the effect of the interference. Page 8, lines 19-24 explains that a change of the frequency in the order of the data rate is sufficient. The data rate is much, much smaller than the carrier frequency. Changing the carrier frequency by the order of magnitude of the data rate results in only a slight deviation from the previous carrier frequency.

Since, the whole point of the frequency hopping method taught by Braun is to eliminate the effect of interference occurring at a particular frequency or rather at a particular frequency band at a given moment, one of ordinary skill in the art would not have hopped to a frequency that differs from the previous frequency by only the order of magnitude of the data rate.

In item 7 on page 5 of the Office action, claims 6-8 have been rejected as being obvious over Braun et al. (4,809,296) in view of Stewart et al. (5,812,557) under 35 U.S.C. § 103.

Even if it were obvious to combine the references as alleged by the Examiner, the claimed invention would not have been obtained for the reasons specified above in regard to claim 1.

In item 8 on page 5 of the Office action, claims 12-19 have been rejected as being obvious over Braun et al. (4,809,296) in view of McCaslin (5,036,294) under 35 U.S.C. § 103.

Support for the changes to claims 12 and 16 can be found by referring to claim 1, for example.

Claims 12 and 16 define a device including, inter alia, a carrier frequency generator for generating different carrier frequencies located only in a single channel.

Even if it were obvious to combine the references as alleged by the Examiner, the claimed invention would not have been obtained. Please see the discussion above with regard to the meaning of the term channel.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1, 11, 12, or 16.

Claims 1, 11, 12, and 16, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on one of these claims, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-19 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, he is respectfully requested to telephone counsel so that, if possible, patentable language can be worked out. In the alternative, the entry of the amendment is requested as it is believed to place the application in better condition for appeal, without requiring extension of the field of search.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any other fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,



For Applicants

Mark P. Weichselbaum
Reg. No. 43,248

MPW:cgm

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Lerner and Greenberg, P.A.
Post Office Box 2480
Hollywood, FL 33022-2480
Tel: (954) 925-1100
Fax: (954) 925-1101



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Thomas Reisinger et al.
Applic. No. : 09/994,197
Filed : November 26, 2001
Title : Method and Device for Carrying Out Simplex
Data Transmisison
Examiner : Kevin Kim
Group Art Unit : 2634

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claim 12 (amended). A device for carrying out simplex
transmission of a data message modulated onto a carrier
frequency, comprising:

a carrier frequency generator for generating different carrier
frequencies located only in a single channel, said carrier
frequency generator having at least one capacitor and a
detunable oscillator crystal detuned through said at least one
capacitor; and

a transmitter modulating data messages with said carrier
frequencies and transmitting the data messages in temporal
succession.

Claim 16 (amended). A device for carrying out simplex transmission of a data message modulated onto a carrier frequency, comprising:

a carrier frequency generator for generating different carrier frequencies located only in a single channel, said carrier frequency generator having at least one capacitor and a detunable oscillator crystal detuned through said at least one capacitor; and

a transmitter modulating data messages with said carrier frequencies and transmitting the data messages more than one time using at least two different carrier frequencies in temporal succession to increase immunity to interference; said carrier frequencies only changed to have said carrier frequencies occur within one single transmission channel.